

**REMARKS**

The withdrawal of the rejection under 35 USC 112, second paragraph, of claims 1-7, 29, and 31; and the withdrawal of the rejection under 35 USC 102(b) of claims 1-15, 17-21, 23, 25, 27, 29, 31, and 33 as being anticipated by US Patent 5,772,846 to Jaffee are noted with appreciation.

In order to expedite prosecution of this application, claim 24 has been cancelled.

Applicant's invention, as recited by remaining claims 1-7, 9, 11-23, 25-29, and 31-33, as amended, is directed to a nonwoven, fibrous mat comprising a blend of a major portion of chopped glass fibers and a minor portion composed of glass or mineral fine staple fibers, and a gypsum board faced with such a mat. In various embodiments, the gypsum board exhibits a combination of desirable structural and functional features that render it fire resistant and easily painted or otherwise given an aesthetically pleasing finish after installation with a minimum of surface preparation required. The mat has a high permeability, permitting easy extraction of excess water ordinarily present during slurry-based manufacture of gypsum or other hydraulic set board.

Claim 24 stands rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention. In view of the cancellation of claim 24, it is submitted that the rejection thereof under 35 USC 112, second paragraph, is now moot.

Accordingly, withdrawal of the rejection of claim 24 under 35 USC 112, second paragraph, as being indefinite is respectfully requested.

Claims 1-7, 12-15, 18, 24, 29, and 33 stand rejected under 35 USC 102(b) as being anticipated by US Patent 5,389,716 to Graves, which discloses a binder composition for fibrous mats that is said to be fire resistant when cured. The mats are said to be suitable for a backing layer for gypsum. In view of the cancellation of claim 24, the foregoing rejection will be discussed with reference to remaining claims 1-7, 12-15, 18, 29, and 33.

The Examiner has referred to Office Action of February 3, 2005, wherein claims 1-8, 12-15, 18, 24, 29, and 33 were rejected under 35 USC 102(b) as being anticipated by Graves, as providing details for the present rejection.

With respect to claim 9, which was newly rejected over Graves as well, the Examiner has pointed to col. 9, lines 50-60; col. 11, lines 33-37; and col. 10, lines 15-25, as purportedly teaching a fibrous mat comprising mineral wool fibers having a diameter between 2 and 6 microns, which may be in part substituted with glass fibers having a diameter between 3 and 30 microns.

Applicant respectfully submits that Graves does not provide a basis on which *prima facie* anticipation of claims 1-7, 12-15, 18, 29, and 33 can be grounded. More specifically, applicant maintains that Graves fails to disclose every feature delineated by claims 1, 29, and 33. Even less does Graves disclose every feature of claims 2-7, 12-15, and 18, which depend from claim 1, and are submitted to be novel for at least the same reasons as claim 1. While Graves admittedly discloses certain fibrous mats and the use of fibrous mats as backing for gypsum boards, the disclosure falls far short of the specificity required to predicate anticipation of the gypsum board recited by claims 1 and 29 and the

hydraulic set board of claim 33, let alone the preferred gypsum board of claims 2-7, 12-15, and 18.

It is established law that a reference that describes subject matter delineated by a numerical range of composition does not *per se* anticipate a claim delineating a different range merely because of the overlap of such ranges. Rather, a case-by-case factual analysis is required. *Ex parte Cole*, 2001 WL 1918535 (BPAI, 2001), quoting *Ex parte Lee*, 31 USPQ2d 1105, 1107 (BPAI, 1993). In the present instance, it is submitted that the Examiner has not pointed to any disclosure in Graves of the numerical ranges required by applicant's claims 1, 29, and 33, whether explicit or implicit, which recite a web comprising a blend of a major portion composed of chopped glass fibers having an average fiber diameter ranging from about 8 to 17  $\mu\text{m}$  and a minor portion composed of fine staple fibers having an average fiber diameter of less than about 5.5  $\mu\text{m}$ , the minor portion being composed of glass or mineral fibers and comprising about 1-30 percent of the dry weight of the web. Moreover, the Examiner has not pointed to any species disclosed by Graves that fall within the aforesaid ranges. It is further submitted that even if Graves discloses a gypsum or hydraulic set board faced with fibrous mat that *arguendo* comprises fibers characterized by ranges broadly overlapping the particular ranges recited by claims 1, 29, and 33, the Examiner's rejection falls far short of providing the specificity needed to establish anticipation. ["Where, as here, a reference describes a class of compositions, the reference must be analyzed to determine whether it describes a composition(s) with sufficient specificity to constitute an anticipation under the statute.

*Ex parte Lee*, supra, at 1106-1107, emphasis added, citing *In re Schaumann*, 572 F.2d 312, 197 USPQ 5 (CCPA 1978).]

Applicant respectfully submits that Graves discloses ranges that are vastly broader than applicant's claimed ranges. The Examiner has pointed to Graves' disclosure of glass fibers having a diameter between 3 and 30 microns, whereas applicant's claims require average fiber diameter ranging from about 8 to 17 microns. In addition, applicant's claims delineate a mat having a "minor portion" of fine staple fibers that comprise about 1-30 percent of the dry weight of the web, whereas Graves teaches that wool and glass fibers can be present in any weight ratio whatsoever, including mats made exclusively with one or the other of wool or glass fibers. ["The weight ratio of wool fibers to glass fibers may range from 0:1 to 1:0..." Col. 11, lines 56-57.] Applicant respectfully submits that even without the further distinctions set forth hereinbelow, the sheer breadth of the Graves teaching with respect to wool fiber diameter and proportion relative to glass fiber, compared to applicant's far narrower ranges of fiber diameter and proportion, precludes any possibility that the "sufficient specificity" required under *Lee* for a finding of anticipation could be established. While the Examiner has contented that in one embodiment the mineral wool fibers in the Graves mat can comprise a portion of 1-30 percent of the mat, there is no citation of any disclosure or suggestion in Graves even hinting at such a ratio. Clearly, no Graves species falls within such a range. Furthermore, Graves' preferred and more preferred ranges for ratio of wool fibers to glass fibers (1:1 to 9:1 and 7:3 to 9:1, respectively – see col. 11, lines 58-59) require at least half (1:1) and more preferably a substantial preponderance of the smaller wool fibers (i.e.

70-90%), whereas applicant calls for a “minor portion” of the smaller staple fibers. Applicant respectfully notes that the six species provided by Table 1 accord with Graves’ express preference, employing a wool fiber to glass fiber ratio of 90/10 or 80/20, said amounts of wool fiber (80-90%) being far larger than the 1-30 percent delineated by claims 1, 29, and 33. It is submitted that these preferred ratios undermine any allegation that Graves provides the requisite “sufficient specificity” for anticipation of applicant’s claimed range.

Moreover, applicant submits that surprising and unexpected results delineated by the instant specification even further rebut any purported conclusion that Graves provides the requisite level of specificity of disclosure. [“If the claims are directed to a narrow range, the reference teaches a broad range, and there is evidence of unexpected results within the claimed narrow range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with ‘sufficient specificity’ to constitute an anticipation of the claims. The unexpected results may also render the claims unobvious.” MPEP 2131.03 (II).]

In particular, it is submitted that Graves fails even to recognize the properties of applicant’s claimed mat that render it advantageous for use as a gypsum board facer, including: (i) a high permeability that permits extraction of water during board fabrication without also causing excessive intrusion of the gypsum slurry into and through the facer (page 8, lines 23-25); (ii) a smooth surface of the mat with a surprisingly low content of fine staple fiber (page 9, lines 11-14); and (iii) a smooth surface of the final board product, that surprisingly is not well correlated with the

smoothness of the mat before board fabrication (page 20, lines 5-7). This beneficial combination of properties arises from the use of mat employing particular fibers having the sizes and relative amounts delineated by applicant's claims. However, the Examiner has not pointed to any disclosure or suggestion of such unexpected benefits in Graves, let alone a disclosure having sufficient specificity to permit a person of ordinary skill to recognize the subject matter of claims 1-7, 12-15, 18, 24, 29, and 33. It is respectfully submitted that a person of ordinary skill in possession of Graves would not have any basis on which to select the particular non-woven mat used as the facer of applicant's gypsum board, nor any reasonable expectation of success in obtaining the beneficial properties provided thereby.

Accordingly, it is further maintained that the showing of improved results that were surprising and unexpected at the time of the invention, specifically the comparison afforded by Example 6 of the specification (page 19, line 15 and following) between gypsum board made with known mat facers (Comparative Example 1) and applicant's boards made with the facers as delineated by claims 1, 29, and 33 (e.g., Examples 3 and 5 set forth in Tables III and IV), provides objective evidence of the non-obviousness of the presently claimed board. As set forth at page 20, lines 5-7, the smoothness of dry cured mat surprisingly and unexpectedly is not indicative of the smoothness of finished board. As a result, it is submitted that Graves' disclosure at col. 12, lines 14-21 regarding the relatively coarser or softer hand of finished mat would incorrectly guide a person of ordinary skill seeking a gypsum or hydraulic set board, and would not motivate the selection, from the vast range of possible fiber combinations disclosed by Graves, of the mat used to face applicant's construction board. It is respectfully submitted that these results fully suffice to

establish the novelty and non-obviousness of applicant's claimed subject matter. ("[W]hen an applicant demonstrates substantially improved results, as Soni did here, and states that the results were unexpected, this should suffice to establish unexpected results in the absence of evidence to the contrary." *In re Soni*, 54 F.3d 746, 751, 34 USPQ 2d 1684, 1687-88 (Fed. Cir. 1995).)

For at least these reasons, it is submitted that Graves does not disclose or suggest a gypsum or other hydraulic set board having the outstanding combination of structural and functional properties afforded by the gypsum board recited by present claims 1-7, 12-15, 18, and 29, and the hydraulic set board of claim 33.

Accordingly, reconsideration of the rejection of Claims 1-7, 12-15, 18, 24, 29, and 33 under 35 U.S.C. 102(b) as being anticipated by Graves is respectfully requested.

Claims 1-2, 5, 7, 9, 11, 17-19, 22-23, 28-29, and 31-33 were rejected under 35 USC 103(a) as being unpatentable over US Patent 6,723,670 to Kajander et al. in view of US Patent 4,637,951 to Gill.

At the time that the subject matter defined by applicants' claims 1-2, 5, 7, 9, 11, 17-19, 22-23, 28-29, and 31-33 was invented, each of the present application and U. S. Patent 6,723,670 was owned by Johns Manville International Inc. or was subject to an obligation of assignment to Johns Manville International Inc. The present application was filed on June 27, 2003, and has been assigned to Johns Manville International Inc. Recordation of the assignment on November 5, 2003 is memorialized at Reel 014676, Frame 0541. U.S. Patent 6,723,670 is assigned on its face to

Johns Manville International Inc. Recordation of the assignment of U.S. Patent 6,723,670 to Johns Manville International Inc. on August 7, 2001 is memorialized at Reel 012067, Frame 0435.

Accordingly, applicant submits that under the provisions of 35 U.S.C. 103(c), U.S. Patent 6,723,670 is not applicable as prior art under 35 U.S.C. 102(e), 102(f), or 102(g) against the instant application. In light of the inapplicability of U.S. Patent 6,723,670 as a prior art reference, applicant respectfully requests that the rejection of claims 1-2, 5, 7, 9, 11, 17-19, 22-23, 28-29, and 31-33 under 35 USC 103(a) as being unpatentable over Kajander et al. in view of Gill be withdrawn.

Claim 16 was rejected under 35 USC 103(a) as being unpatentable over Graves in view of US Patent 6,365,533 to Horner, Jr., et al., which relates to a low fiber, plyable facer suitable for use in insulation board manufacture.

Applicant respectfully disagrees with the Examiner's position that Graves teaches the invention recited by claim 16, except for disclosure of a second face comprising kraft paper, as set forth hereinabove in connection with the 102(b) rejection of claims 1-7, 12-15, 18, 24, 29, and 33 over Graves. It is respectfully maintained that Horner, Jr., et al. does not cure the aforementioned deficiencies of Graves to render obvious the invention of claim 16.

For these reasons, and those set forth above, it is submitted that the combination of Graves and Horner, Jr., et al. does not disclose or suggest the gypsum board recited by present claim 16.



Accordingly, reconsideration of the rejection of claim 16 under 35 U.S.C. 103(a) as being obvious over the combination of Graves and Horner, Jr., et al. is respectfully requested.

Claim 26 was rejected under 35 USC 103(a) as being unpatentable over Graves in view of US Patent Publication US 2004/0209071 to Carbo et al., which discloses acoustical tiles, also known as acoustical panels, ceiling tiles, or ceiling panels, that are said to inhibit the growth of fungus, bacterial and other micro-organism.

The Examiner has asserted that Jaffee teaches the claimed invention but fails to teach that the core further comprises a biocide. Applicant presumes that the reference to Jaffee is a typographical error, Graves having been intended.

Applicant respectfully disagrees that [Graves] teaches the claimed invention except for a biocide contained in the core, for at least the reasons set forth hereinabove in connection with the 102(b) rejection of claims 1-7, 12-15, 18, 24, 29, and 33 over Graves. Applicant further maintains that Carbo et al. fails to cure the lack of disclosure or suggestion of a gypsum board employing the nonwoven mat facers delineated by claim 1, from which claim 26 depends.

As a result, it is submitted that the combination of Graves and Carbo et al. does not disclose or suggest a gypsum board having the outstanding combination of properties afforded by the board recited by present claim 26.

Accordingly, reconsideration of the rejection of claim 26 under 35 U.S.C. 103(a) as being obvious over the combination of Graves and Carbo et al. is respectfully requested.

Claims 25 and 27 were rejected under 35 USC 103(a) as being unpatentable over Graves in view of US Patent 4,647,496 to Lehnert et al., which provides an exterior finishing system for a building, such as a fibrous mat-faced gypsum board having a water resistant, set gypsum core.

Applicant respectfully disagrees with the Examiner's position that Graves teaches the invention recited by claims 25 and 27, except for disclosure of a gypsum core comprising at least one water repellant agent, as required by claim 25, and reinforcing fiber, as required by claim 27. More specifically, for the reasons set forth hereinabove in connection with the 102(b) rejection of claims 1-7, 12-15, 18, 24, 29, and 33, applicant respectfully submits that Graves fails to disclose or suggest the non-woven fibrous mat facer required for the gypsum board of claim 1, on which claims 25 and 27 depend. Neither does Lehnert et al. contain any disclosure or suggestion of the particular facer delineated by claim 1. Consequently, the Lehnert et al. teaching fails to cure the deficiency of Graves. Applicant thus submits that even in combination, Graves and Lehnert et al. do not disclose or suggest the gypsum board delineated by claims 25 and 27.

Accordingly, reconsideration of the rejection of claims 25 and 27 under 35 U.S.C. 103(a) as being obvious over the combination of Graves and Lehnert et al. is respectfully requested.

Claims 20-21 were rejected under 35 USC 103(a) as being unpatentable over Kajander in view of Gill and further in view of US Patent 5,514,744 to Brown, which discloses a combined alumina, cement, and gypsum product comprising 100 parts by weight of alumina cement, 10 to 100 parts by weight of an aqueous polymer precursor emulsion, and 15 to 600 parts by weight of a hemi-hydrate gypsum. The Brown product is said to be usable to form a plastering mix that may be applied, e.g. to a wall.

As set forth hereinabove in connection with the rejection under 35 USC 103(a) of claims 1-2, 5, 7, 9, 11, 17-19, 22-23, 28-29, and 31-33, applicant respectfully submits that under the provisions of 35 USC 103(c), Kajander is unavailable as prior art for an obviousness rejection of the instant claims under 35 USC 103(a), the Kajander patent having been commonly owned at the time of the invention of the subject matter of the instant application.

Accordingly, applicant respectfully requests that the rejection of claims 20-21 under 35 USC 103(a) as being unpatentable over Kajander in view of Gill and further in view of Brown be withdrawn.

In view of the cancellation of claim 24 and the foregoing remarks, it is respectfully submitted that the present application has been placed in allowable condition. Reconsideration of the final rejection of claims 1-29 and 31-33, entry of this amendment

and allowance of the application, as delineated by amended claims 1-7, 9, 11-23, 25-29, and 31-33, are earnestly solicited.

Respectfully submitted,

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